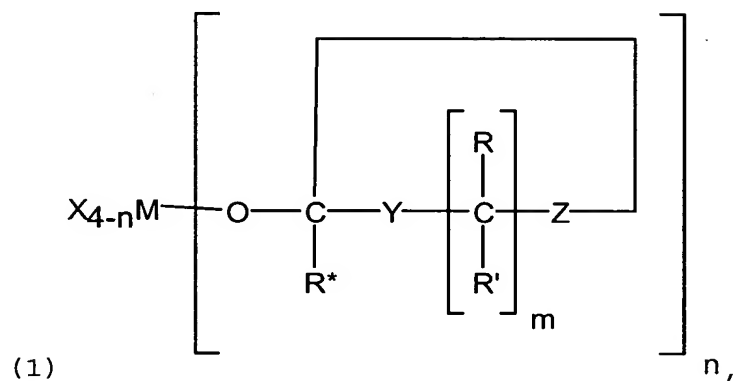


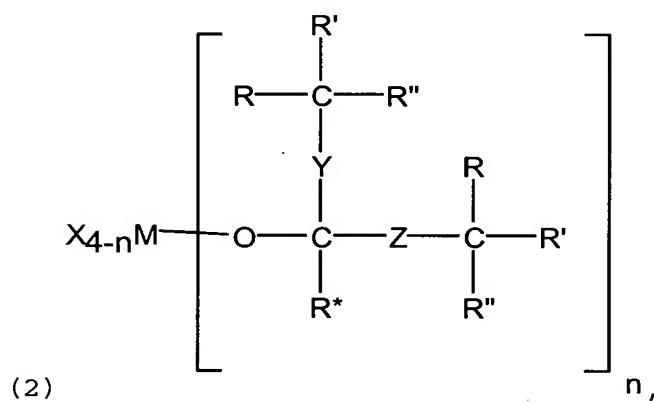
WHAT IS CLAIMED IS:

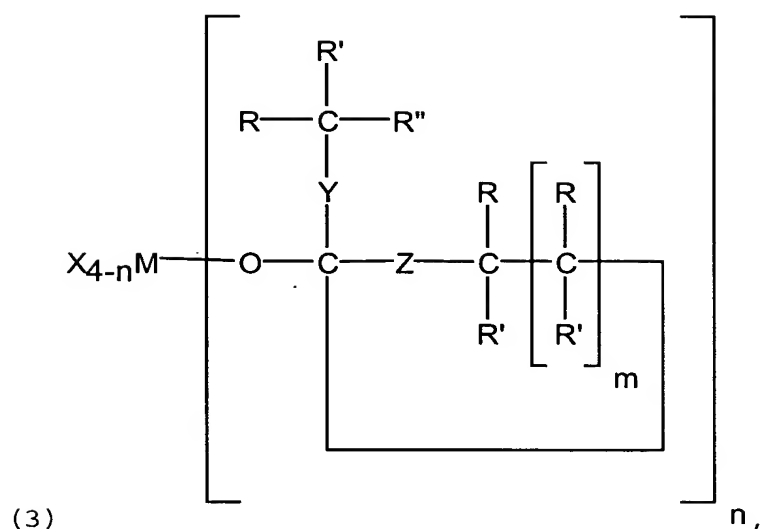
1. An organometallic compound having a structural formula selected from the group consisting of:

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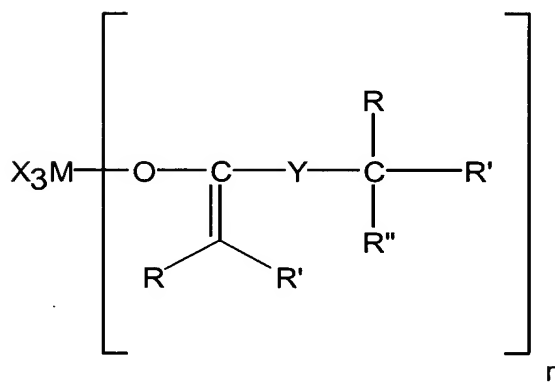


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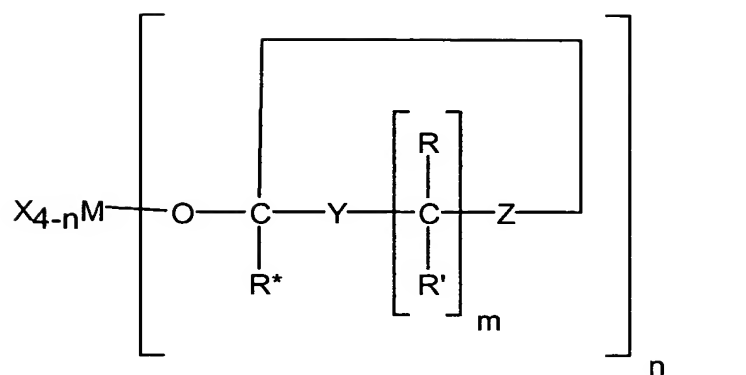
and



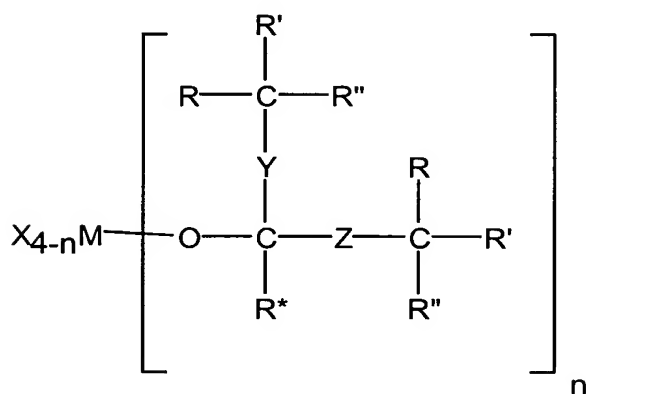
wherein M represents an atom selected from the group consisting of Ge, Sn, Pb, Ti, and Zr; wherein n represents an integer from 1 to 4; wherein m represents an integer from 1 to about 20; with the proviso that m can represent the integer 0 for structures of formula (3) wherein Z represents the group C(R)R'; wherein X groups can be the same or different; wherein X represents a chemical moiety; wherein R, R', and R'' can be the same or different and are selected from the group consisting of hydrogen atoms, alkyl

groups containing from 1 to about 12 carbon atoms, aryl groups containing from about 6 to about 18 carbon atoms, alkaryl groups containing from 7 to about 18 carbon atoms, alkoxy groups containing from 1 to about 18 carbon atoms, hydroxy groups, and halide atoms; wherein R\* is selected from the group consisting of hydrogen atoms, alkyl groups containing from 1 to about 12 carbon atoms, aryl groups containing from about 6 to about 18 carbon atoms, and alkaryl groups containing from 7 to about 18 carbon atoms; wherein R, R', R'', and R\* can be bonded together in any combination in cases where R, R', R'', and R\* are not hydrogen atoms, halide atoms, or hydroxy groups; wherein Y represents a moiety selected from the group consisting of C(R)R', oxygen, sulfur, nitrogen, and phosphorus; wherein Z represents a moiety selected from the group consisting of C(R)R', oxygen, sulfur, nitrogen, and phosphorus; with the proviso that Y and Z can not both represent the moiety C(R)R'; wherein the contiguous cyclic ring in formulas (1) and (3) can contain heteroatoms selected from the group consisting of oxygen, sulfur, nitrogen, phosphorus, and silicon in cases where m represents an integer greater than 1; wherein the contiguous cyclic ring in formulas (1) and (3) can be saturated or unsaturated in cases where m represents an integer greater than 1; wherein said alkyl groups, aryl groups, alkaryl groups, and alkoxy groups can contain halide atoms and heteroatoms selected from the group consisting of oxygen, sulfur, nitrogen, phosphorus, and silicon.

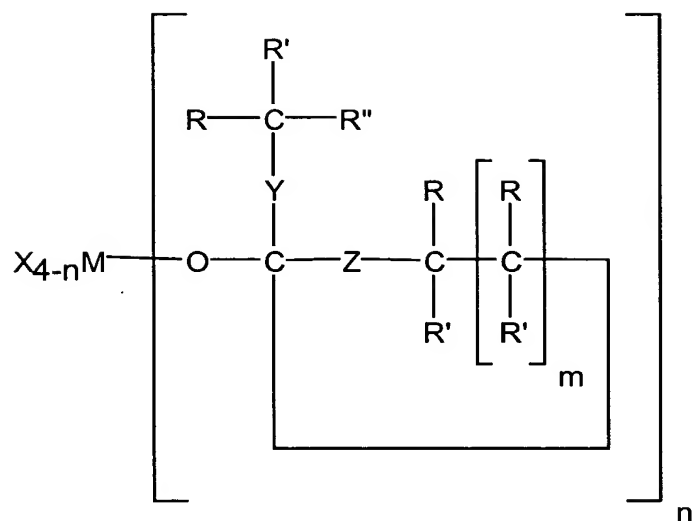
2. An organometallic compound as specified in claim 1 wherein the organometallic compound is of the structural formula:



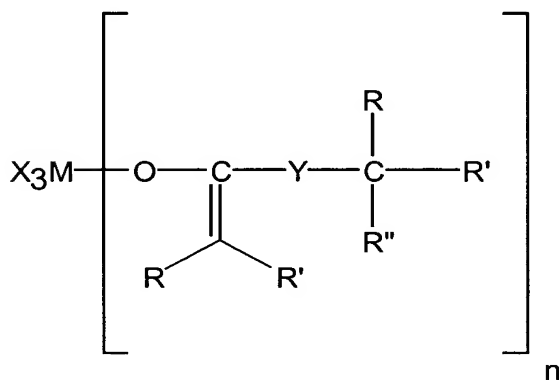
3. An organometallic compound as specified in claim  
1 wherein the organometallic compound is of the structural  
5 formula:



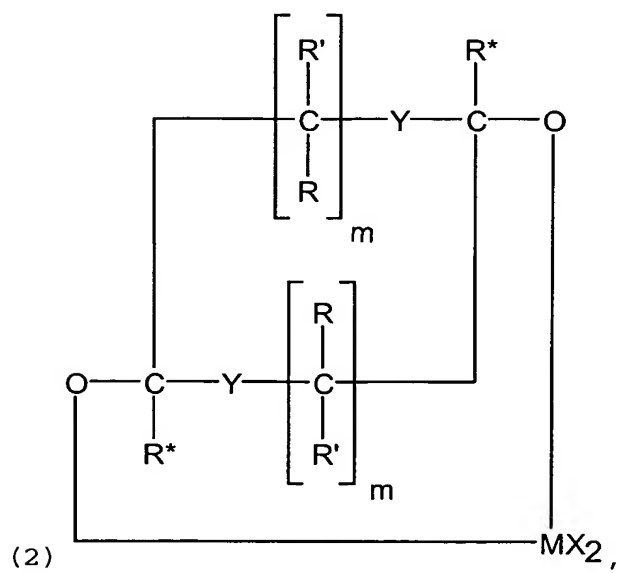
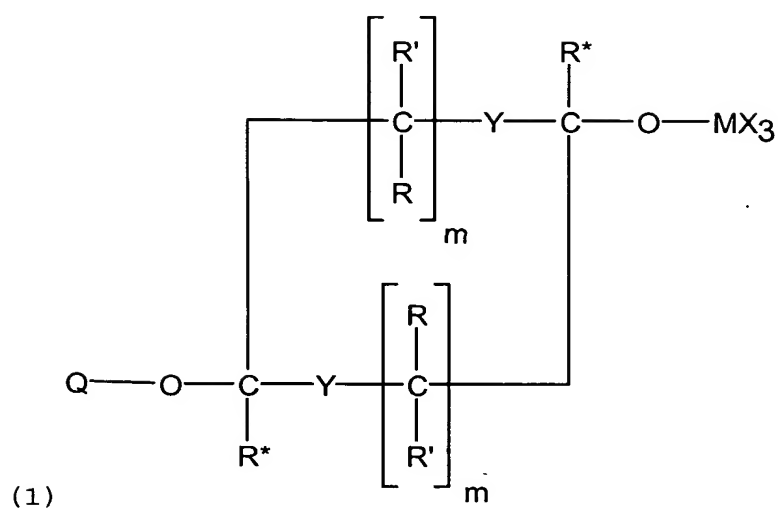
4. An organometallic compound as specified in claim  
10 1 wherein the organometallic compound is of the structural  
formula:

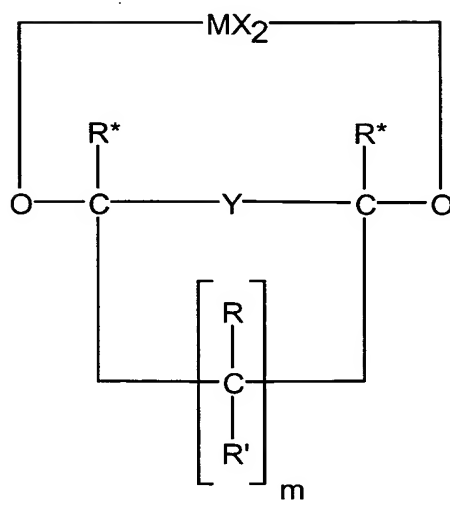
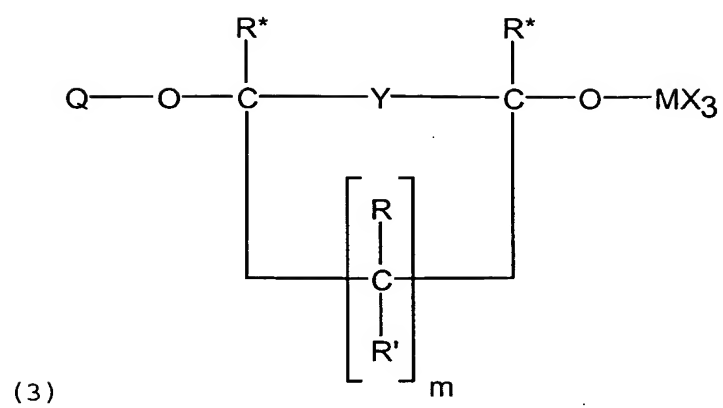


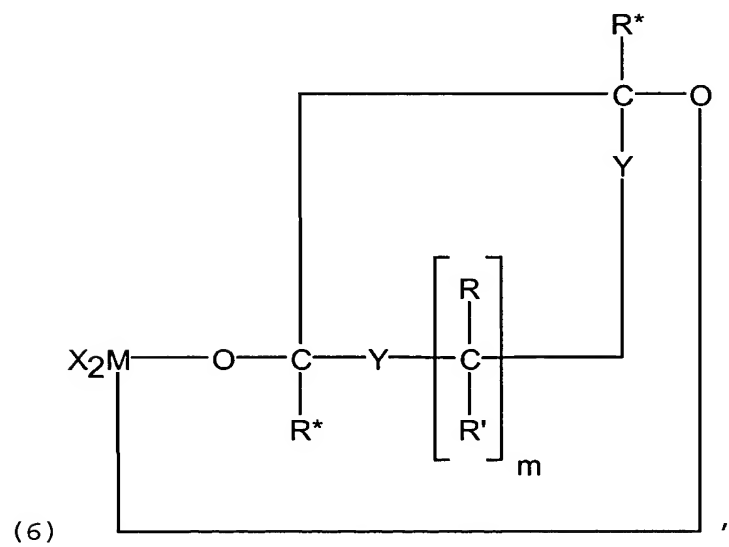
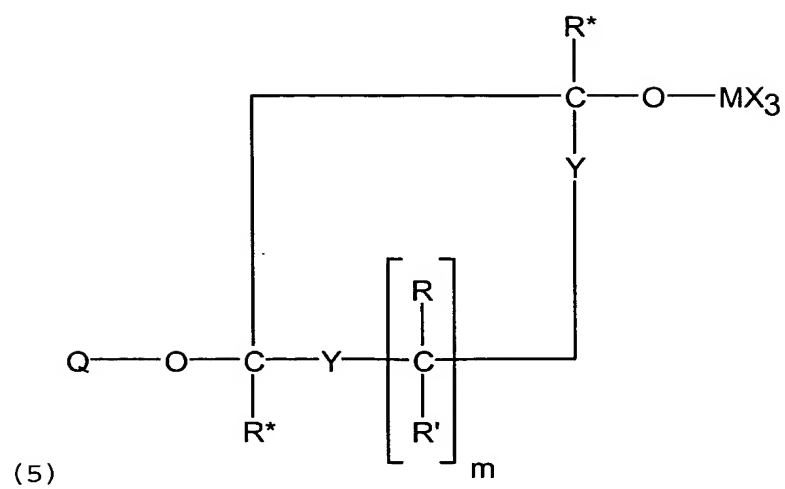
5. An organometallic compound as specified in claim  
1 wherein the organometallic compound is of the structural  
5 formula:



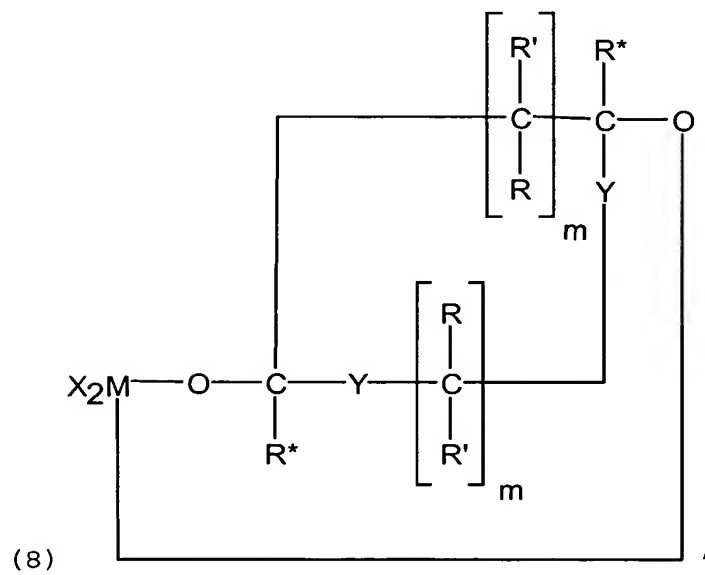
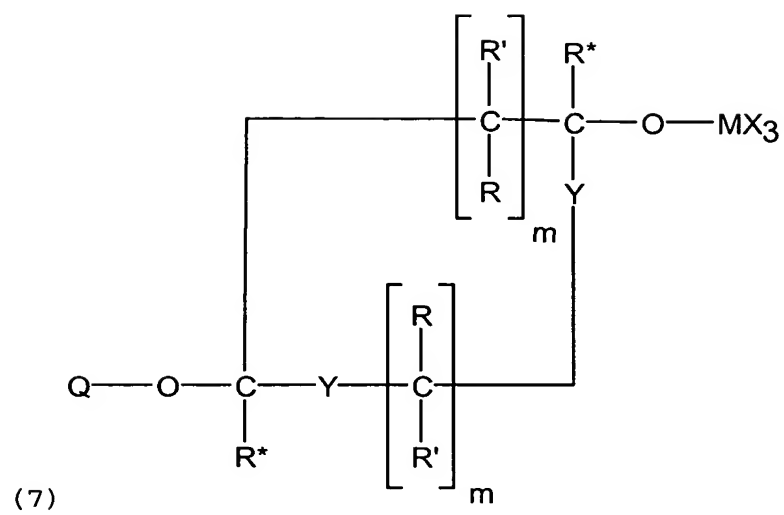
6. An organometallic compound having a structural  
10 formula selected from the group consisting of:

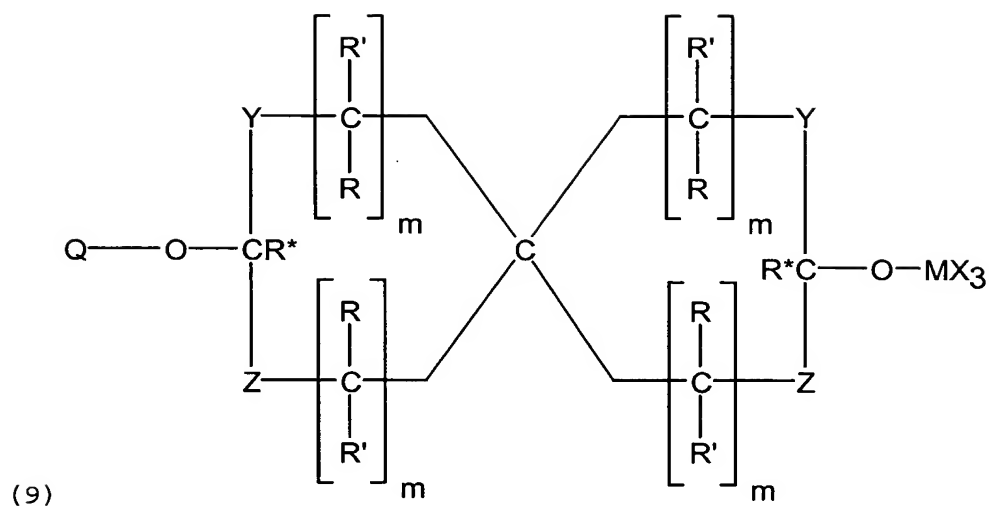




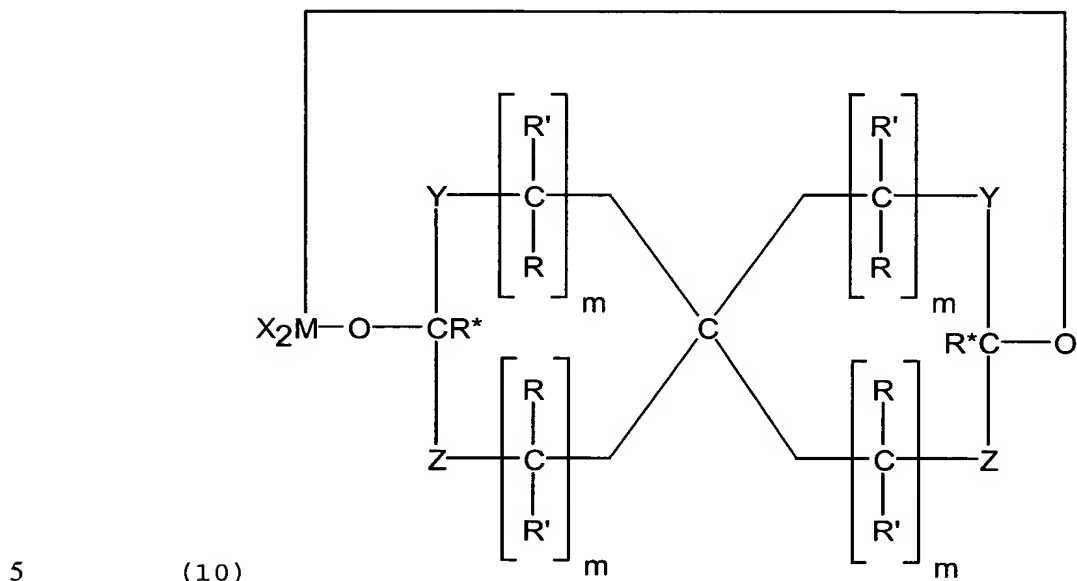








and

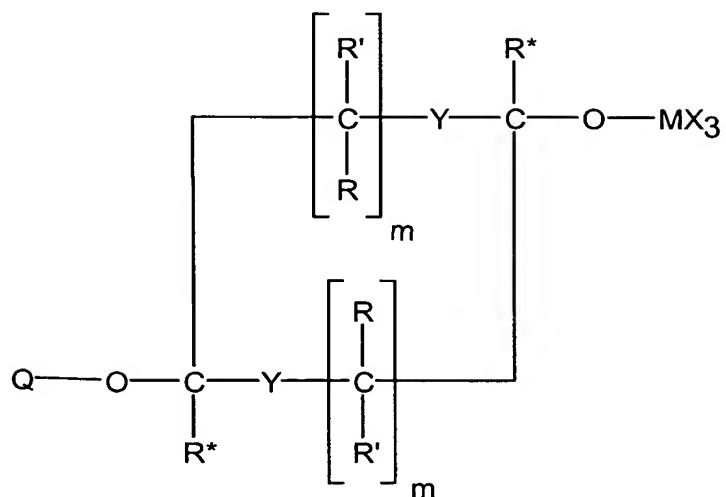


wherein M represents an atom selected from the group consisting of Ge, Sn, Pb, Ti, and Zr; wherein m represents an integer from 1 to about 20; wherein X groups can be the same or different; wherein X represents a chemical moiety; wherein Q is selected from the group consisting of hydrogen atoms and MX<sub>3</sub>; wherein R and R' can be the same or different

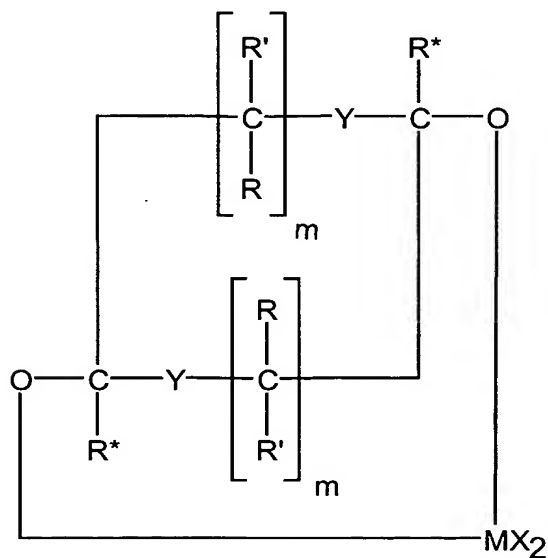
and are selected from the group consisting of hydrogen atoms, alkyl groups containing from 1 to about 12 carbon atoms, aryl groups containing from about 6 to about 18 carbon atoms, alkaryl groups containing from 7 to about 18 carbon atoms, alkoxy groups containing from 1 to about 18 carbon atoms, hydroxy groups, and halide atoms; wherein R\* is selected from the group consisting of hydrogen atoms, alkyl groups containing from 1 to about 12 carbon atoms, aryl groups containing from about 6 to about 18 carbon atoms, and alkaryl groups containing from 7 to about 18 carbon atoms; wherein R, R', and R\* can be bonded together in any combination in cases where R, R', and R\* are not hydrogen atoms, halide atoms, or hydroxy groups; wherein Y represents a moiety selected from the group consisting of oxygen, sulfur, nitrogen, and phosphorus; wherein Z represents a moiety selected from the group consisting of C(R)R', oxygen, sulfur, nitrogen, and phosphorus; wherein the contiguous cyclic ring in formulas (1), (2), (3), (4), (5), (6), (7), (8), (9), and (10) can contain heteroatoms selected from the group consisting of oxygen, sulfur, nitrogen, phosphorus, and silicon in cases where m represents an integer greater than 1; wherein the contiguous cyclic ring in formulas (1), (2), (3), (4), (5), (6), (7), (8), (9), and (10) can be saturated or unsaturated in cases where m represents an integer greater than 1; wherein said alkyl groups, aryl groups, alkaryl groups, and alkoxy groups can contain halide atoms and heteroatoms selected from the group consisting of oxygen, sulfur, nitrogen, phosphorus, and silicon.

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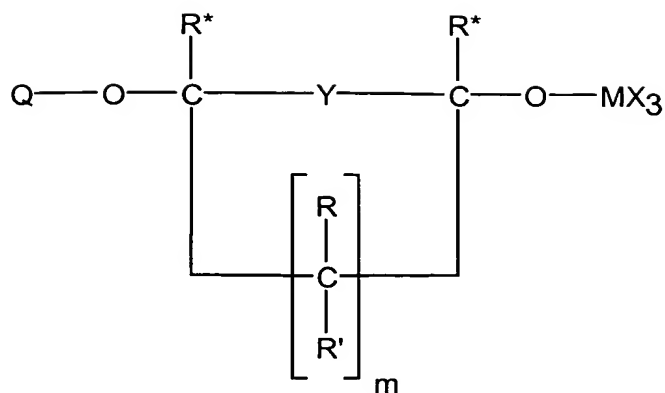
7. An organometallic compound as specified in claim 6 wherein the organometallic compound is of the structural formula:



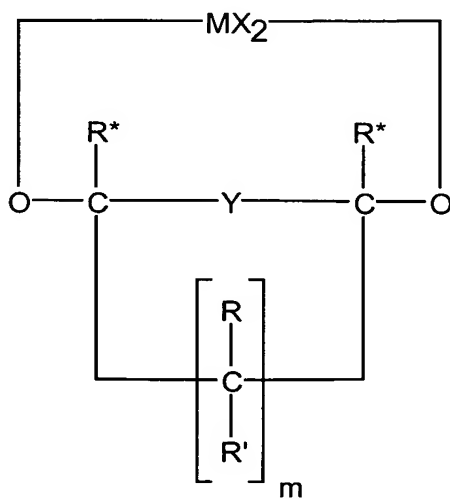
8. An organometallic compound as specified in claim  
5 6 wherein the organometallic compound is of the structural  
formula:



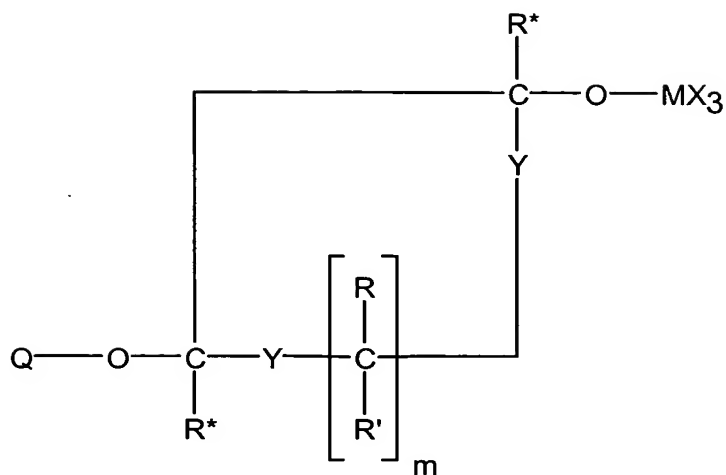
- 10 9. An organometallic compound as specified in claim  
6 wherein the organometallic compound is of the structural  
formula:



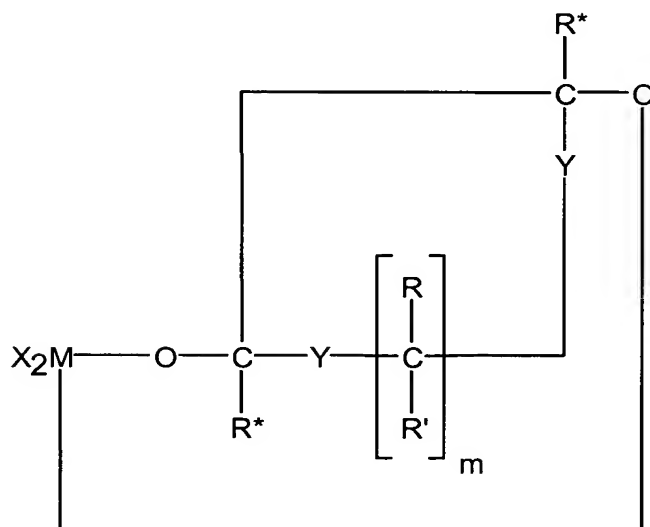
10. An organometallic compound as specified in claim 5 6 wherein the organometallic compound is of the structural formula:



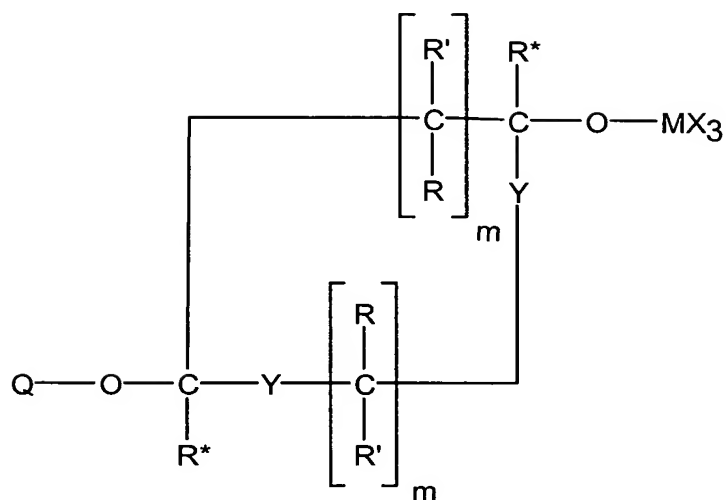
- 10 11. An organometallic compound as specified in claim 6 wherein the organometallic compound is of the structural formula:



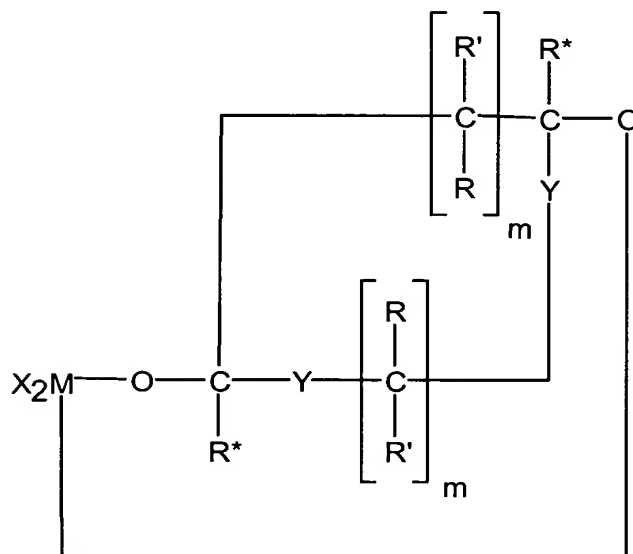
12. An organometallic compound as specified in claim  
6 wherein the organometallic compound is of the structural  
5 formula:



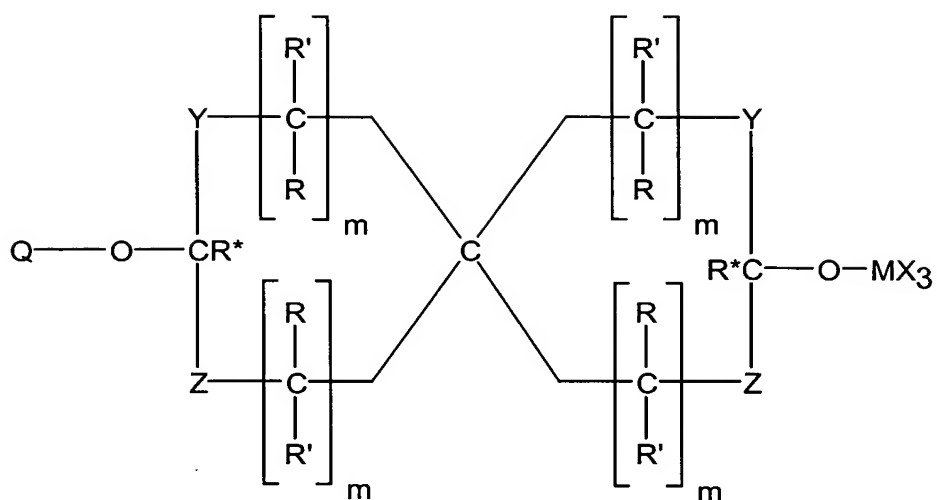
13. An organometallic compound as specified in claim  
10 6 wherein the organometallic compound is of the structural  
formula:



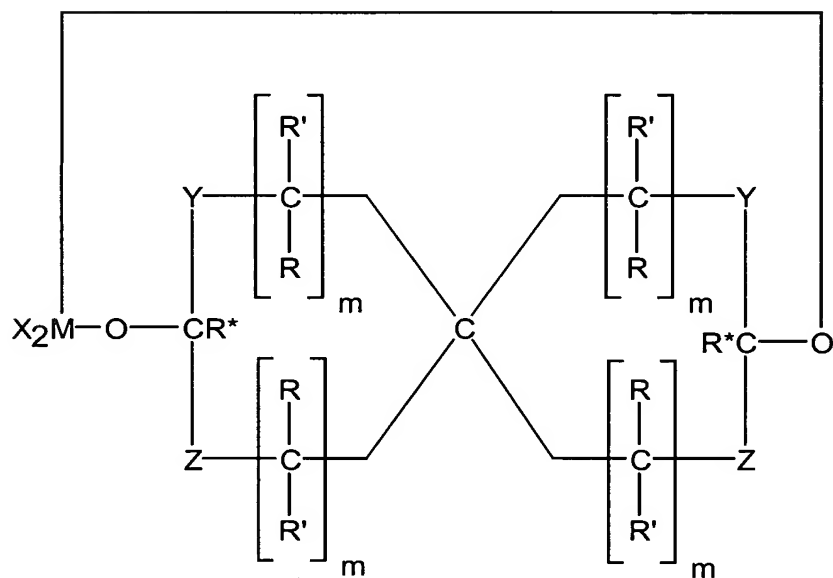
14. An organometallic compound as specified in claim 6 wherein the organometallic compound is of the structural formula:



15. An organometallic compound as specified in claim 6 wherein the organometallic compound is of the structural formula:



16. An organometallic compound as specified in claim  
6 wherein the organometallic compound is of the structural  
5 formula:



17. An organometallic compound as specified in claim  
10 1 wherein at least one of the members selected from the  
group consisting of R, R', and R'' is a hydroxyl group.



18. An organometallic compound as specified in claim 2 wherein at least one of the members selected from the group consisting of R, R', and R'' is a hydroxyl group.

5        19. An organometallic compound as specified in claim 4 wherein at least one of the members selected from the group consisting of R, R', and R'' is a hydroxyl group.

10       20. An organometallic compound as specified in claim 6 wherein at least one of the members selected from the group consisting of R, R', and R'' is a hydroxyl group.